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ABSTRACT

This study of informal education examines traditional tailors' apprenticeship training in Liberia. The purpose is to compare and contrast a form of informal education with formal schooling. An examination was made of a group of one hundred tailors having all combinations of tailoring experience, from none to thirty years, and schooling, from none to tenth grade. It was shown that both formal schooling and apprenticeship training predict performance in their own contexts. It was concluded that a major contrast between school and apprenticeship training is the role of testing in the organization of these different educational experiences. (Author/MC)

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Contrasting Cognitive Effects of Formal and Informal Education

(Talk delivered at the

American Anthropological Association Meetings)

Houston, November 1977

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There is a great divide in the anthropological literature on the organization of education, between formal education on the one hand and informal education on the other. Informal education is said to be personalistic and traditional. Learning occurs through a process of observation and demonstration. Education is an incidental by-product of the daily round of activities. Examples of informal education as described in the literature range across many aspects of socialization, from the basic self-management skills learned by small children, to chores, to ritual lore, to adult occupational skills. Formal education is said to emphasize universal values and change as an end in itself. Learning situations are abstracted from the daily round of activities. The prime example, perhaps the only example in the literature, is Western schools.

There is much experimental evidence from the cross-cultural psychological literature that these differently organized educational experiences affect cognitive skills; or at least affect performances in experimental situations. Schoolchildren perform differently--usually better--on experimental tasks than children who have not been to school. Running through various explanations for these findings is the theme that the characteristics of formal schooling especially enhance the transfer of problem-solving skills from the situations in which they are learned, to new domains.

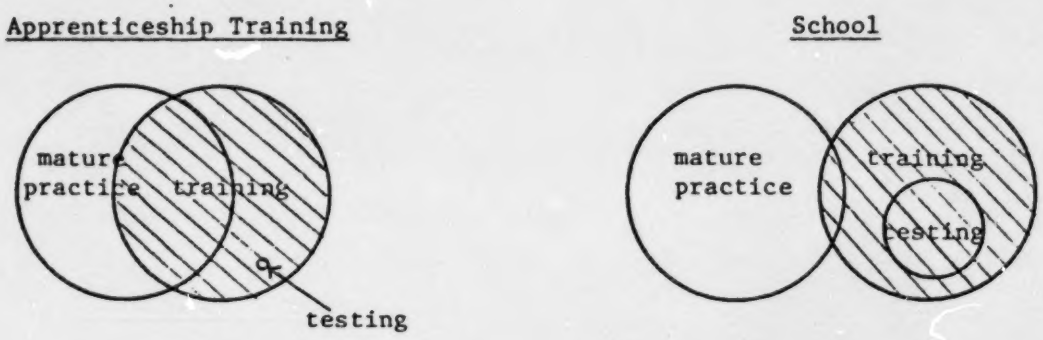
In reviewing this literature I was struck by the lack of knowledge embodied in the use of "nonschool" subjects as the group to whom schoolchildren have been compared. Surely, there was more to be said about their educational experiences than simply that they "had not gone to school."

I decided to study some form of informal education in detail. It seemed useful to examine a case which had some of the general characteristics attributed to informal education. But "informal education" ranges from toilet-training to koranic schools, and a choice had to be made about how informal the case should be. I chose traditional tailors' apprenticeship training because it shares a number of features with schooling. This makes it possible to hold constant (in a rough way) some aspects of the organization of education while looking at variation in those features of education which psychologists and anthropologists have pointed out as crucial.

Both tailors' apprenticeship and school take several years to complete, and both teach complex bodies of knowledge. (Incidentally, both teach arithmetic skills--this came to be important during the course of the research, although I had not foreseen this at the beginning.)

There are a variety of ways in which they differ. School typically involves a sequence of verbal instruction followed by practice; apprenticeship usually follows a sequence of observation and then practice. For schoolchildren, learning occurs outside the context of mature practice, while for apprentices learning occurs in intimate association with the practice of mature tailoring skills. The role of testing in each form of education grows out of the relationship between learning contexts and the

context of mature practice. A diagram may help to illustrate the different relationships. In apprenticeship training there is a tremendous



overlap between work and learning contexts. Feedback on apprentices' progress comes from their constant participation in real work situations. While the concept of formal testing is not absent in apprenticeship training, it has a very small part in structuring the learning process.

School, in contrast, has only a serial relationship with the mature practice of reading, writing and arithmetic skills; and the application of these skills in real world situations does not necessarily follow from having learned them. Here testing looms large as a means of assessing learning progress. I haven't time to detail all of the contrasts between the organization of educational experiences in apprenticeship training and schooling, but the ones described here are probably the most important.

Several months of participant-observation among Vai and Gola tribal tailors in Monrovia, the capital of Liberia, went into the characterization of apprenticeship training just presented. In addition, a sample of 100 tailors, ranging from beginners with no tailoring experience to masters with as much as thirty years of experience, participated in a number of experimental tasks. The tailors also varied in formal schooling from none up to tenth grade. But schooling and tailoring experience were independent

of each other, so that all combinations of tailoring experience and schooling were present in this group of 100 tailors.

Elementary arithmetic is taught in both school and in apprenticeship training. In addition, apprentices learn to measure, to estimate lengths, and to extrapolate simple functions. It was therefore possible to vary the familiarity of the tasks in relation to each educational context. For example, a series of elementary arithmetic problems included schoolbook arithmetic and problems drawn out of the daily tasks of the tailors. An estimation task consisted of a sequence of problems in which the tailors were asked to guess the circumference of waistbands of pairs of trousers; the circumference of loops of string; lengths of string; and pieces of wood. These problems started with the very familiar and became progressively less familiar, from the tailors' point of view, as they moved from waistband problems to lengths of wood. All of these problems were equally unfamiliar in the context of school-based learning.

I used regression analysis to separate out the effects of tailoring experience and schooling in their impact on task performance. Results indicate that both formal schooling and apprenticeship training predict performance. But formal schooling predicts performance in those tasks which have no equivalent in tailoring practice and are compatible with school arithmetic in both content and format, while tailoring experience predicts performance in those tasks which are specifically relevant to tailoring. Neither schooling nor tailoring predicts performance on several tasks which have no close analogues in either school or tailoring contexts.

A careful comparison of experimental tasks to the routine tasks of school and apprenticeship training suggested to me that there were strong situational constraints on learning transfer. It is not just that the

content of problems should be familiar. It is not just that the operations needed to carry out the task should be familiar. But the concurrence of content and operations must be a familiar relationship before learning transfer occurs.

I have come to feel quite uncomfortable with the model I began with in this project. I imagined a Santa-Claus-like individual, focussed exclusively on the problem-solving task narrowly defined, searching his pack of mental tricks for the appropriate goody. On the basis of the Liberian research, I am beginning to think of learning transfer as a socially transacted process of fitting problem-solving scenarios to new situations.

In closing, I want to turn back to the original question of why schoolchildren often do better on experimental tasks than nonschoolchildren. The work with tailors calls into question the general learning transfer effect of formal schooling as an adequate explanation of experimental performance (although my results are not broadly enough based to definitively reject the school-based transfer hypothesis).

Let me suggest at least one additional factor which may help to account for these results. A major contrast between school and apprenticeship training is the role of testing in the organization of these different educational experiences. It seems likely to me that both the overall character of psychological experiments, as well as the specific tasks presented to subjects in experimental situations, provide a scenario which matches that of school tests quite closely. These circumstances may well account for much of the difference in performance found by earlier researchers.